

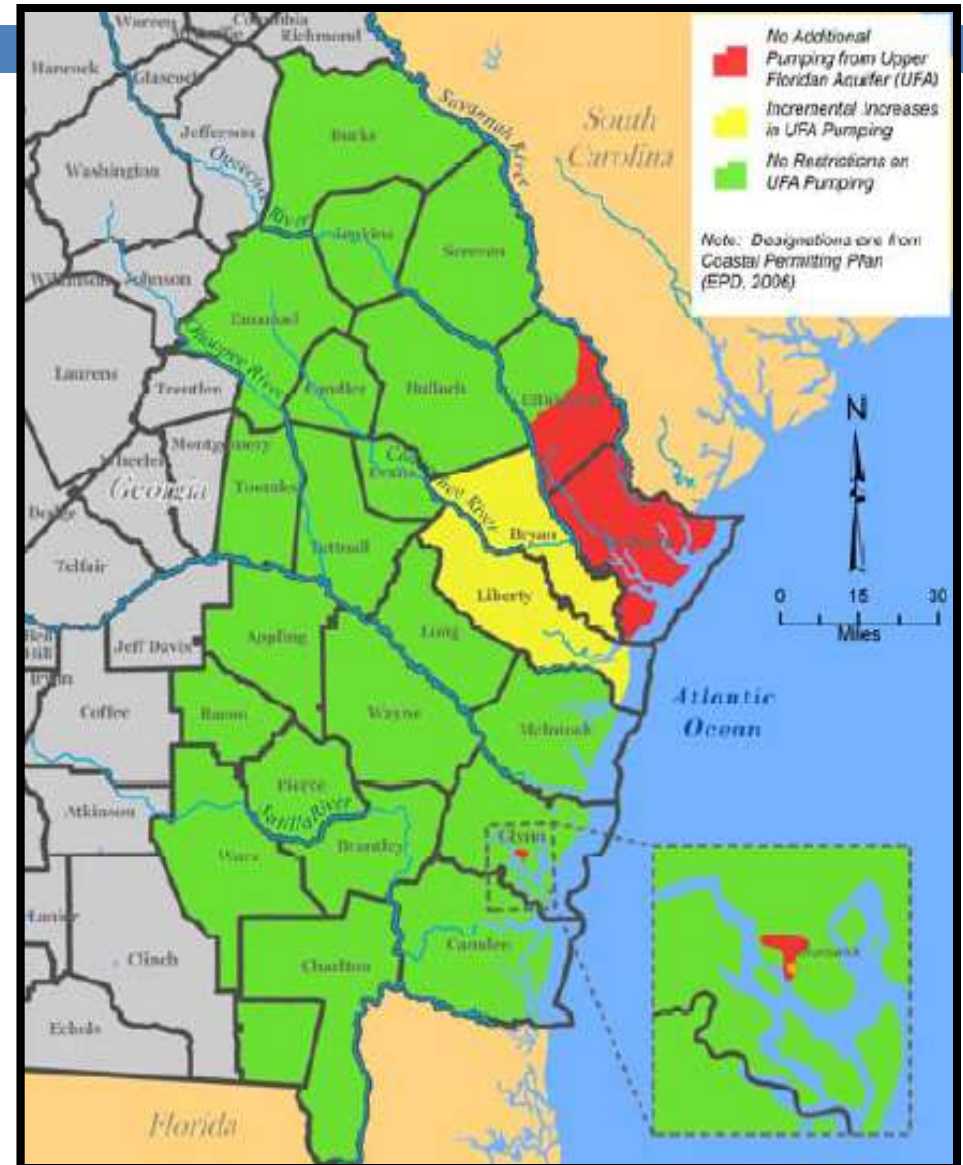
RED ZONE WATER SUPPLY MANAGEMENT PLAN

February 26, 2018
Garden City, GA

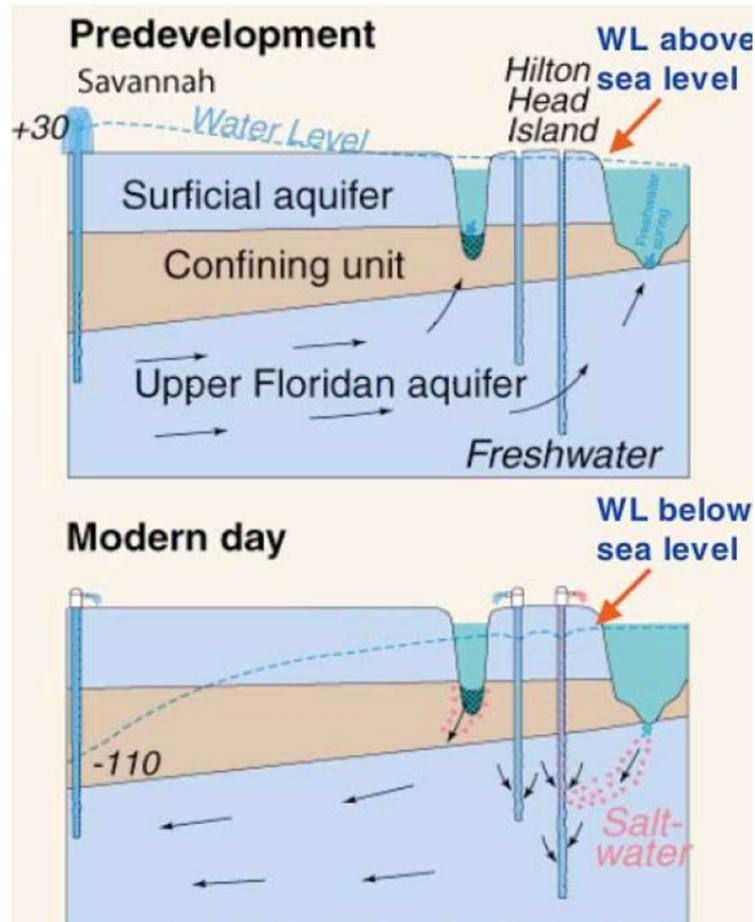


Project Overview & Background

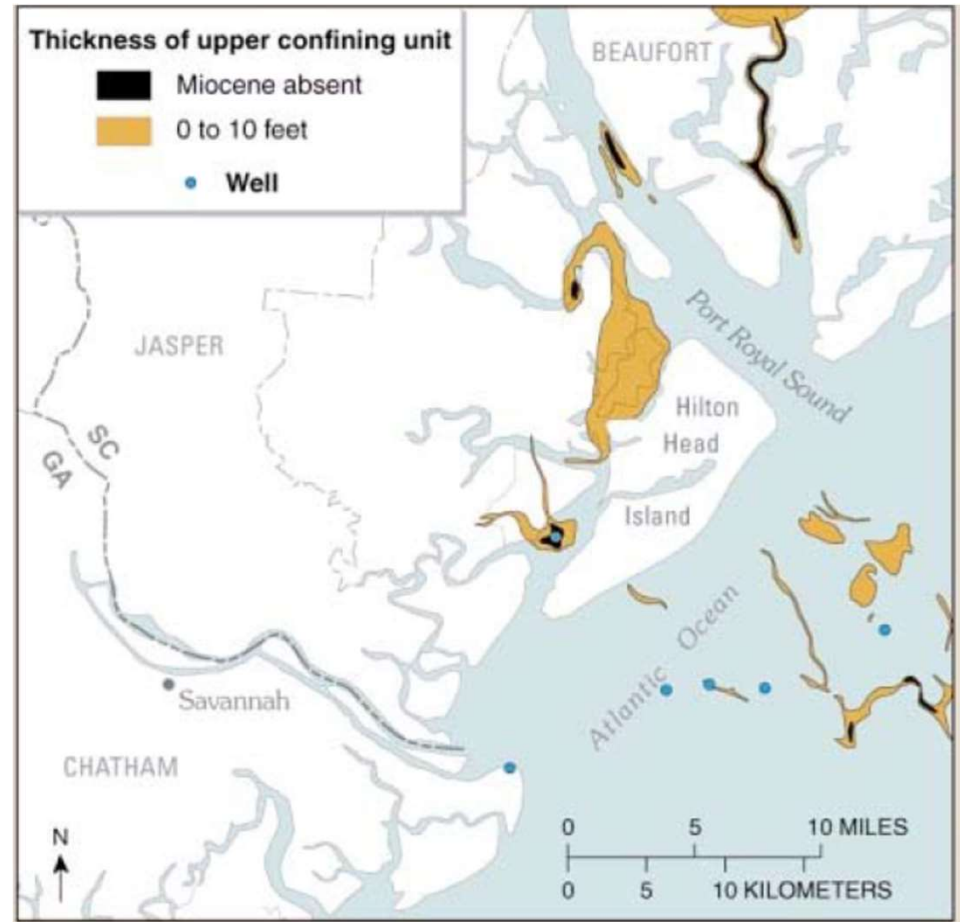
- ❑ 1-year project, started in December 2016.
- ❑ MPC was awarded a Coastal Incentive Grant from DNR-CRD.
- ❑ Goal: address permitted groundwater withdrawal reductions by 2025.
- ❑ Reinstitute “Chatham County Water Supply Management Plan” process for Red Zone.



Saltwater Intrusion in Floridan Aquifer



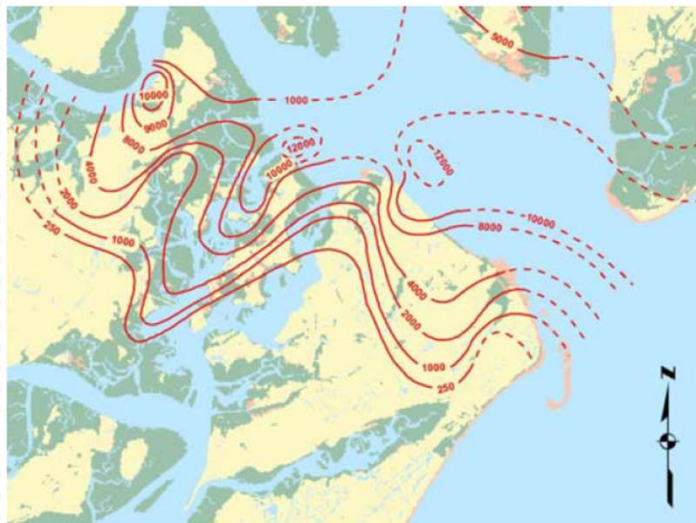
*Provost et al. (2006),
USGS Report 2006-5058*



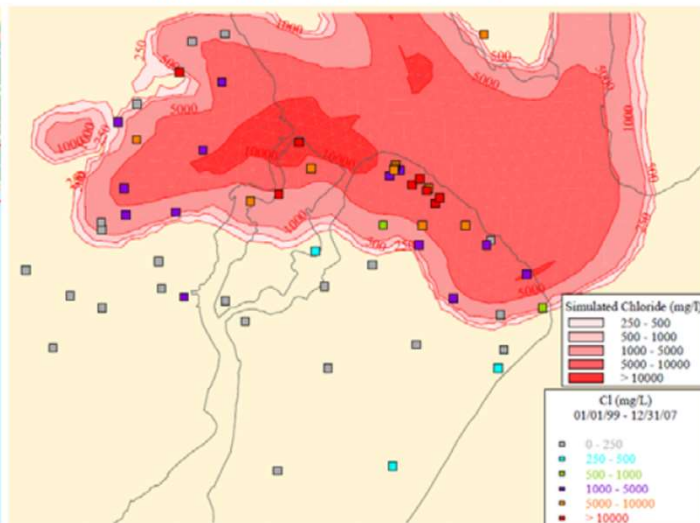
*Foyle et. Al (2001),
GA Geologic Survey Bulletin 132*

Future Concerns & Issues

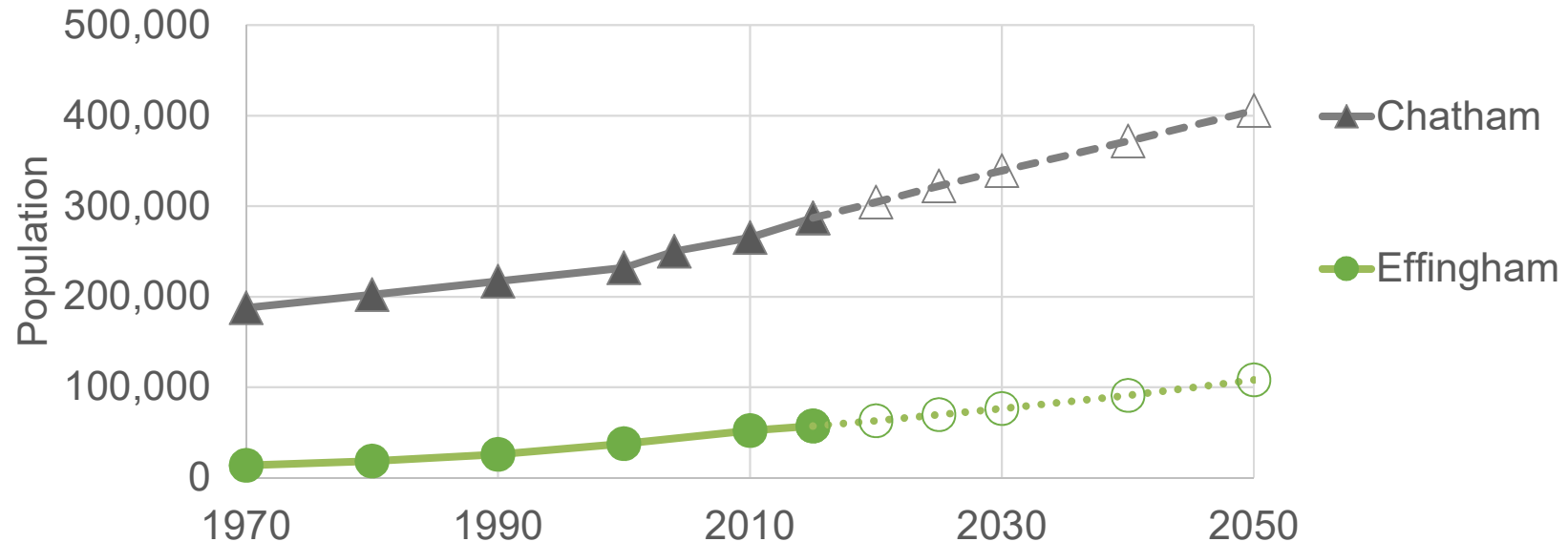
South Carolina DHEC 2007 Chloride Contours



Simulated Salt-Water Plume



Population Growth & Projections

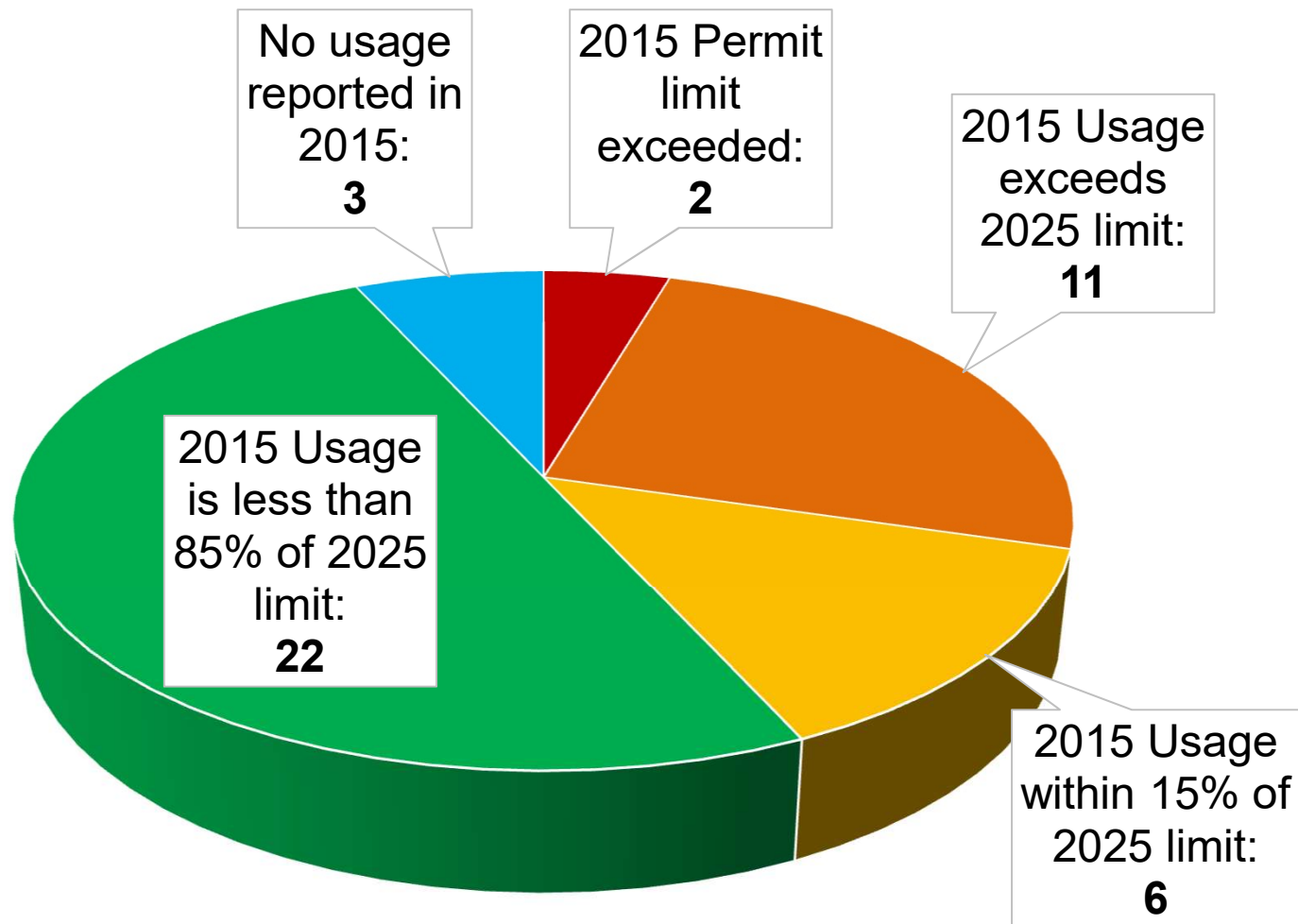


County	2000	2015	2025*	2050*
Chatham	232,048	286,956	322,197* (12.3%)	405,573* (41.3%)
Effingham	37,535	57,106	69,511* (21.7%)	108,029* (89.2%)

*Population Projection Source: GA Governor's Office of Planning and Budget, 2013

2015 Usage vs. 2025 Permit Limits

- 2025 Permit Reductions are generally 22%





Planning Process

Continuation of Chatham County Plan

Chatham County Water Supply Management Plan

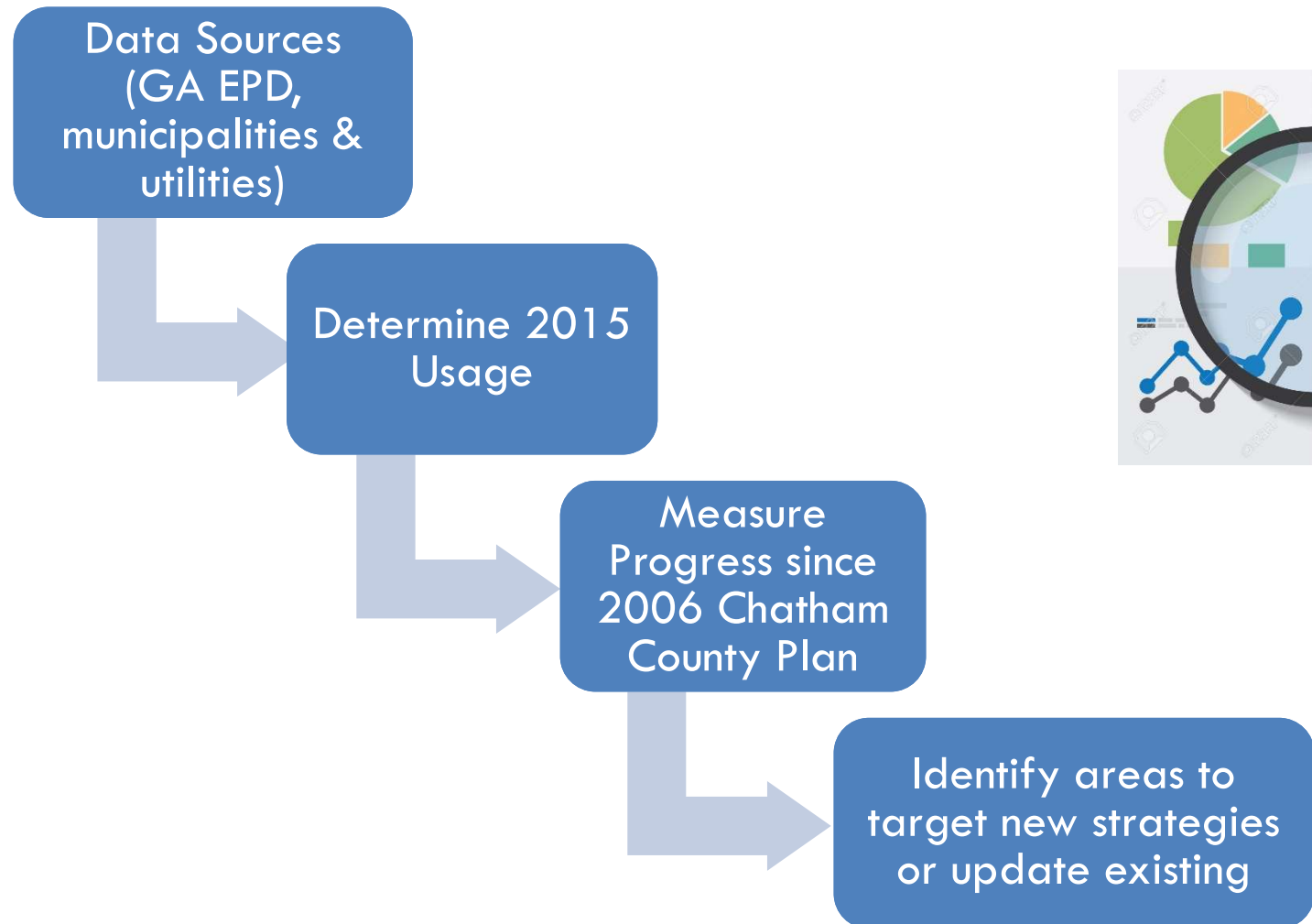
- ❑ First drafted in 1995, updated ever 5 years, last updated 2006.
- ❑ Addressed “*Interim Strategy for Managing Saltwater Intrusion*” (1997).
 - ▣ Goal: Reduce groundwater usage by 10 MGD
- ❑ Results from 1993 to 2004:
 - ▣ Groundwater usage reduced by 16.56 MGD.
 - ▣ Per capita usage reduced from 169 to 135.5 GPCD.

Red Zone Task Force

- Quarterly Meetings in 2017
- Groundwater permit holders, Georgia DCA, UGA PSO, and local environmental groups

Meeting	Key Tasks
1. February 2 nd	<ul style="list-style-type: none">• Introduce project and planning process• Discuss goals for individuals and region (Red Zone)• Review 2006 Chatham County Plan
2. May 23 rd	<ul style="list-style-type: none">• Review data assessment results• Review existing management strategies• Discuss and vote on new strategies
3. August 8 th	<ul style="list-style-type: none">• Three guest presentations on higher priority management strategies• Review updated management strategy list
4. December 14 th	<ul style="list-style-type: none">• Review draft plan

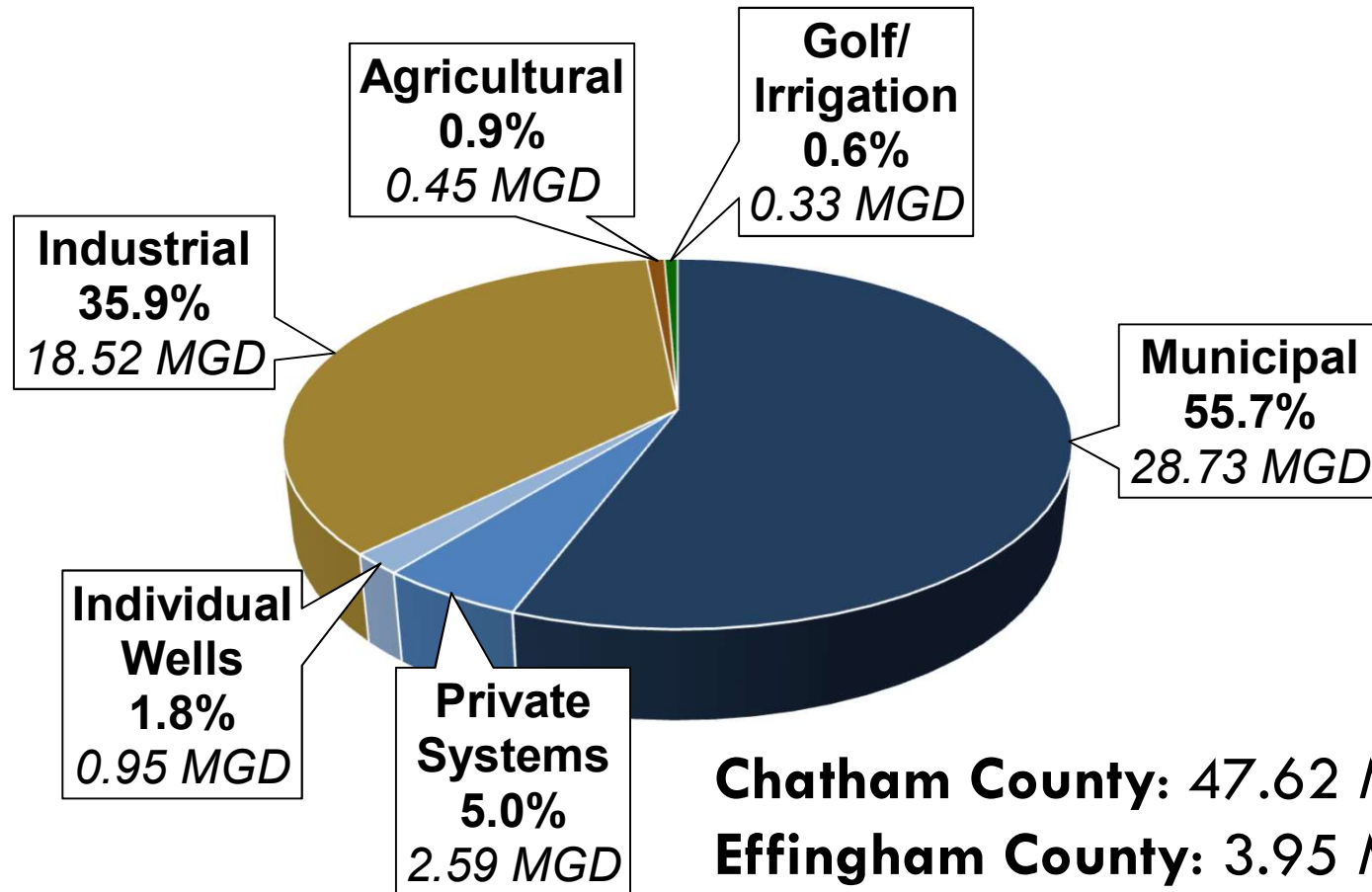
Data Assessment





Data Assessment Highlights

2015 Floridan Groundwater Usage in Red Zone (51.58 MGD)



Chatham County: 47.62 MGD (92.3%)

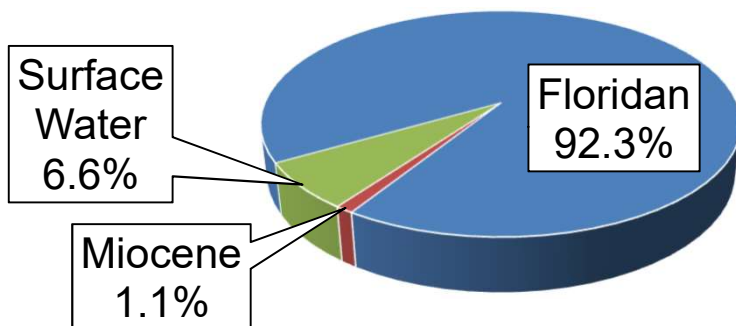
Effingham County: 3.95 MGD (7.7%)

Note: In 2004, Chatham County used 58.56 MGD (reduced by 10.94 MGD)

2015 Per Capita Water Usage, Domestic/Commercial Systems

County	Population Served	Floridan Usage (MGD)	Miocene Usage (MGD)	Surface Water Usage (MGD)	2015 Per Capita Usage (GPCD)
Chatham County	319,401	29.113	0.359	1.568	97.2
Effingham (Red Zone only)	30,617	2.213	0.002	0.689	94.8

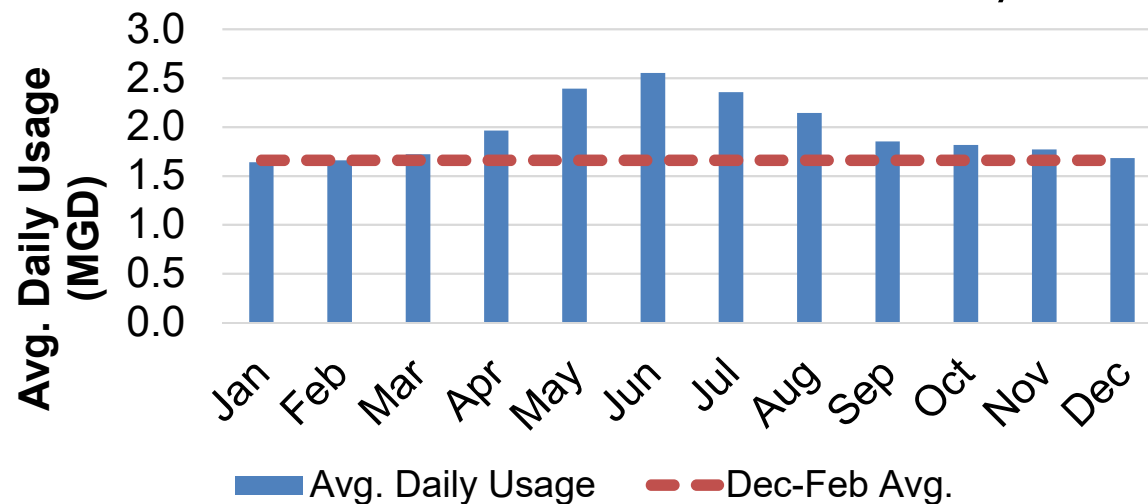
Domestic/Commercial by Aquifer



- Chatham County Plan
 - ▣ 1993: **169 GPCD**
 - ▣ 2004: **135.5 GPCD**
 - ▣ 2015: **97.2 GPCD**

Key Findings & Topics

□ Seasonal Demand – Irrigation overuse/inefficiency



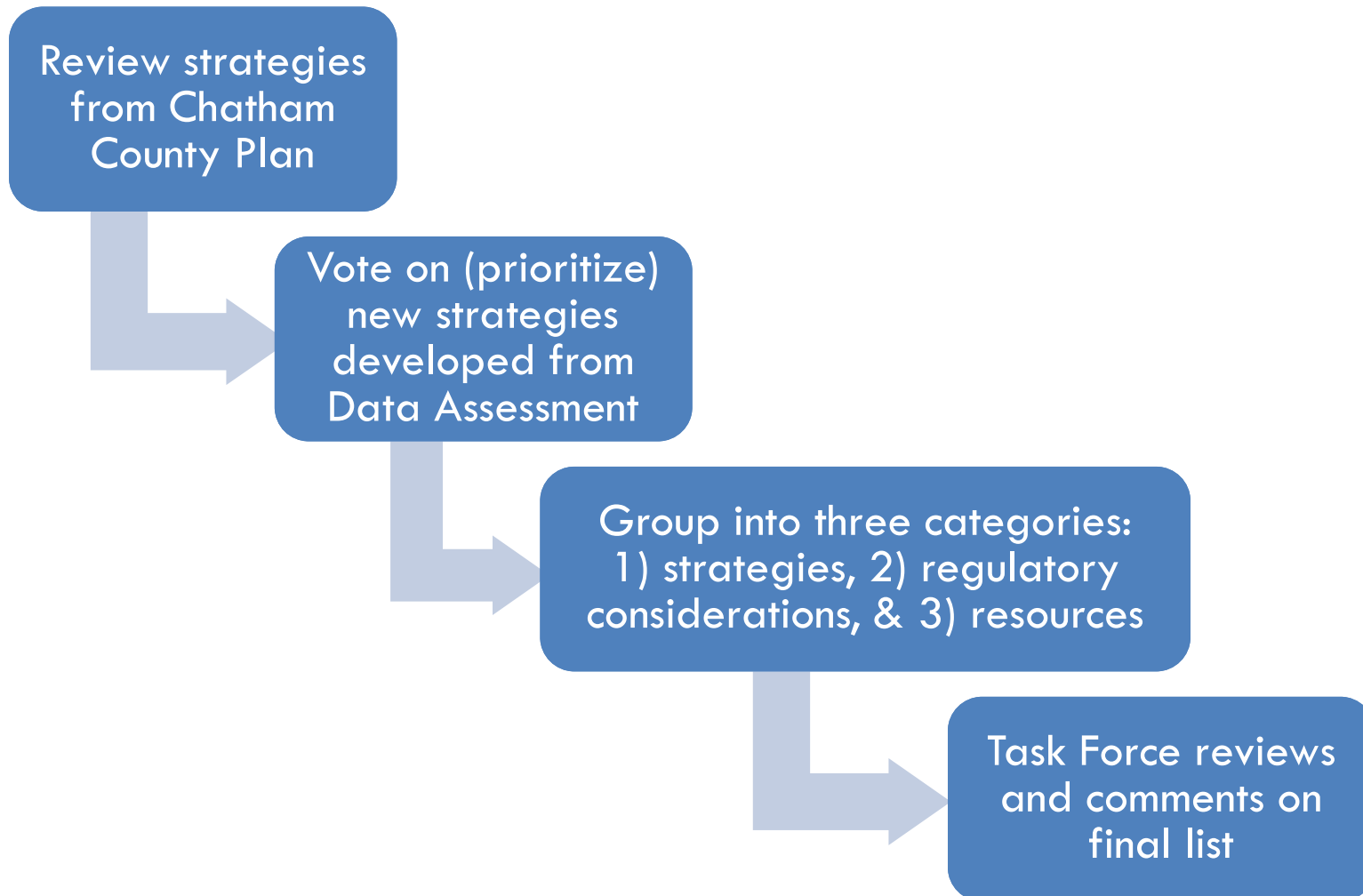
□ Alternative Sources

- Reuse – 3 of 4 WPCPs utilize 0.8 to 3.7% of Effluent
- Surface water – Savannah I&D at ~50% of capacity
- Stormwater – underutilized source for irrigation



Management Strategy Development

Management Strategy Development



Management Strategies



- 43 specific strategies under 10 categories:
 1. Plan Adoption
 2. Data Management & Evaluation
 3. **Planning / Master Planning**
 4. **Irrigation Conservation**
 5. **Water Reclamation**
 6. **Water Rate Structures**
 7. **Water Conservation (General/Incentives)**
 8. **Stormwater Capture & Reuse**
 9. Water Quality Protection
 10. Legislative Action



Acknowledgements

- ❑ Jackie Jackson, Special Projects Coordinator, Garden City, for her participation in the Red Zone Water Supply Management Plan Project Team.
- ❑ This report was prepared by the Chatham County-Savannah Metropolitan Planning Commission and Ecological Planning Group, LLC, under grant award #NA16NOS4190165 to the Georgia Department of Natural Resources from the Office for Coastal Management, National Oceanic and Atmospheric Administration. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of DNR, OCM, or NOAA.



Questions

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